



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/507,112

09/10/2004

Liwen He

36-1842

4135

23117 7590 10/23/2008
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

FERNANDEZ RIVAS, OMAR F

ART UNIT

PAPER NUMBER

2129

MAIL DATE

DELIVERY MODE

10/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/507,112	Applicant(s) HE, LIWEN	
	Examiner OMAR F. FERNANDEZ RIVAS	Art Unit 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-21 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-21 and 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to an Appeal Brief filed by the Applicant entered on August 4, 2008.
2. The finality of the Office Action dated February 1, 2008 has been withdrawn.
3. The Office Actions of February 1, 2008, July 30, 2007, December 12, 2006, and May 17, 2006 are incorporated into this Non-Final Office Action by reference.

Status of Claims

4. Claims 1, 3, 14, 21 and 23-25 have been amended. Claim 2 has been cancelled. Claims 1, 3-21 and 23-25 are pending on this application.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-13 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 21

Claim 1 recites “**said** set **W** of **n** tasks” in line 3. There is insufficient antecedent basis for this limitation in the claim, since the claim recites in lines 1-2 “a set **W** of **n** tasks”. As discussed in the previous Office Action, when a variable is described, it must be described in the same manner so as to make it clear that the variables will be the

same. Note that the use of italics on line 3 suggests that these variables may be different and may not have the same values or describe the same thing. The scope of the claim cannot be determined because of these deficiencies in the claim.

Also note that on line 3 of step (e), it recites “the **set *W*** of tasks”. There is insufficient antecedent basis for this limitation in the claim since the previous limitations in the claim recite a **set *W* of *n* tasks**.

Claims 2-13 depend from claim 1 and incorporate the same deficiency, and furthermore fail to rectify the aforementioned deficiency.

Claim 21 recites limitations similar to those of claim 1 and is rejected on the same basis.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 3-21 and 23-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The computer system must set forth a practical application of judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application.

For a claimed invention to be statutory the claimed invention must produce a useful, concrete, and tangible result. As the Supreme Court has made clear, “[a]n idea of itself is not patentable,” *Rubber-Tip Pencil Co. v. Howard*, 20 U.S. (1 Wall.) 498, 507

(1874); taking several abstract ideas and manipulating them together adds nothing to the basic equation. In re Warmerdam, 31 USPQ2d 1754 (Fed. Cir. 1994).

For a claimed invention to be statutory under 35 U.S.C. 101, the claims must provide a tangible result, and there must be a practical application, by either: 1) transforming (physical thing) or 2) by having the FINAL RESULT (not the steps) achieve or produce a useful (specific, substantial, AND credible), concrete (substantially repeatable/non-unpredictable), AND tangible (real world/non-abstract) result.

A claim that recites a computer that solely calculates a mathematical formula is not statutory.

In the present case, claim 1 describes a method for optimizing allocation of a set of tasks to resources. The claim describes how the optimization is performed, however the claim fails to provide a a useful result because the claimed subject matter fails to sufficiently reflect at least one practical utility set forth in the descriptive portion of the specification. More specifically, while the described practical utility (utilities) is (are) directed to allocating a set of tasks to resources, the claimed subject matter relates ONLY to outputting an optimized population that describes allocation of tasks to resources. The claim is directed to mere manipulation of data for obtaining data which, in and of itself, is useless in a real world situation absent a particular substantial application. The claims are not limited to a substantial practical application because they encompass producing data that has no specific purpose or use. Moreover, outputting data is not a practical and tangible result since data alone has no physical structure and does not itself perform any useful, concrete and tangible result.

The claim also fails to produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for outputting a stabilized population. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

The claim also fails to produce a concrete result because the claimed subject matter fails to be limited to the production of an assured, repeatable result. More specifically, the claimed subject matter is not repeatable because the claim recites “outputting **at least one** of said stabilized population as an optimized allocation of tasks to resources”. Since the claim has not restricted how the optimized allocation of tasks is selected or identified in order to output it, a different result may be obtained from the claimed invention given the same inputs.

Claims 3-13, 19 further limit claim 1 but fail to cure the deficiencies set forth above and are rejected on the same basis.

Claims 21 recites limitations similar to that of claim 1 and is rejected on the same basis.

Claim 14 fails to produce a concrete result because the claimed subject matter fails to be limited to the production of an assured, repeatable result. More specifically, the claimed subject matter is not repeatable because the claim recites “outputting an allocation of the tasks among the devices **according to one** of the allocations included in the stabilized population”. Since the claim has not restricted how the optimized

Art Unit: 2129

allocation is selected or identified in order to output it and providing it to the devices, there is not guarantee that the result obtained from the claimed invention given the same inputs will be the same.

Claims 15-18 and 20 further limit claim 14 but fail to cure the deficiencies set forth above and are rejected on the same basis.

Claims 23-25 recite limitations similar to that of claim 14 and are rejected on the same basis.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-21 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Corne et al. (PCT #WO 02/03716 A1, referred to as **Corne**).

Claims 1 and 21

Corne anticipates an automated computerized method for optimizing allocation of a set W of n tasks to m available resources for accomplishing such tasks using combinatorial multimodal optimization for finding multiple optimal ways of dividing said set W of n task values into m respectively groups associated with said resources, such that each of the groups satisfies a respective constraint condition (**Corne**: p9, L16-21; p12, L26 to p15, L19; p24, L12 to P25, L11; Figs. 3 and 4; Examiner's Note (EN): data

Art Unit: 2129

traffic processed by the nodes in a network are tasks. The nodes in the network are resources. The methods used to find the optimal solution are combinatorial multimodal optimization techniques as understood from paragraph 3 of the present application), the method including execution of a computer program to automatically perform a series of machine operations comprising: (a) receiving digital data signals representing plural tasks for assignment to available resources and, based thereon, defining an initial population of trial solutions assigning specific tasks to specific resources (**Corne**: P16, L1-4; p27, L3-10; Fig. 3); (b) calculating for each trial solution a fitness vector comprising m elements, each of which is indicative of whether the constraint condition of a corresponding respective one of the m groups has been satisfied by the trial solution (**Corne**: p2, L4-6; p3, L30 to p4, L13; p8, L26-32; p9, L23-30; p14, L20-27; p16, L5-23; p28, L14-19; EN: paragraph 12 applies. Groups not further defined in the claim. The objectives are considered groups); (c) selecting a plurality of trial solutions for a next generation in dependence upon their respective fitness vectors (**Corne**: p3, L30 to p4, L13; p16, L5-23; p27, L3-24; Figs. 3-5); (d) creating a new population of trial solutions including the selected earlier trial solutions (**Corne**: P16, L1-26; p28, L21-22; Figs. 3-5); (e) repeating steps (b) to (d) until the population of trial solutions stabilizes, the individual trial solutions of the stable population representing multiple optional ways of dividing the set W of tasks (**Corne**: p16, L1-32; p27, L3-25; Figs. 3-5; EN: the optimum configuration parameters are optional ways of dividing the tasks); and (f) outputting at least one of said stabilized population as an optimized allocation of tasks

Art Unit: 2129

to resources (**Corne**: p27, L26).

Claim 3

Corne anticipates the fitness vector comprises m bits, each bit being indicative of whether the constraint condition of a corresponding one of the m groups has been satisfied (**Corne**: p2, L4-6; p3, L30 to p4, L13; p16, L5-22; P28, L4-19; EN: a computer system operates on bits).

Claim 4

Corne anticipates calculating a fitness value for each individual trial solution (**Corne**: p8, L32 to p9, L6; p24; p28, L4-19; EN: calculating the cost value).

Claim 5

Corne anticipates calculating a fitness value for each individual trial solution in which the fitness value comprises the sum of the bits in the fitness vector (**Corne**: p8, L32 to p9, L6; p24; p28, L4-19; EN: calculating the cost value based on the solution components (the bits in the fitness vector)).

Claim 6

Corne anticipates reserving a proportion of the new population for individual trial solutions selected at step (c) (**Corne**: p8, L32 to p9, L12; p16, L1 to p17, L4; p27, L10-26; p28, L14-22; Fig. 3; EN: paragraph 12 applies. Selecting a group of first solutions based on the cost).

Claim 8

Corne anticipates step (c) comprises selecting non-dominated individual trial solutions using the criteria of Pareto optimality (**Corne**: p3, L29 to p4, L15; p14, L20-27;

Art Unit: 2129

p18, L29-33).

Claim 9

Corne anticipates selecting non-dominated individual trial solutions using the criteria of Pareto optimality including ranking non-dominated individual trial solutions by fitness value, and selecting from the ranked list (**Corne**: p3, L29 to p4, L15; p14, L20-27; p18, L29-33).

Claim 10

Corne anticipates only non-dominated individual trial solutions with greatest fitness value may be selected at step (c) (**Corne**: p8, L33 to p9, L8; p16, L1 to p17, L4; p28, L4-19; EN: paragraph 12 applies. Identifying the solutions having the cost value closer to the target).

Claim 11

Corne anticipates step (c) comprises selecting individual trial solutions in dependence upon both their respective fitness vectors and their respective fitness values (**Corne**: p8, L33 to p9, L30; p16, L1 to p17, L4; p28, L4-19; EN: paragraph 12 applies. Identifying the solutions having the cost value closer to the target. The cost value is determined by the solution components (the fitness vector)).

Claim 12

Corne anticipates crossover and mutation are applied at step (d) to at least some individual trial solutions in the new population (**Corne**: p22, L21-30; p29, L5-7).

Claim 13

Corne anticipates step (c) comprises selecting no more than one individual trial solution for each unique fitness vector (**Corne:** p8, L33 to p9, L30; p16, L1 to p17, L4; p28, L4-19; EN: paragraph 12 applies. Each solution will have its own fitness vector).

Claims 14 and 23

Corne anticipates an automated computerized method of distributing a plurality of tasks between a plurality of devices connected together to form a network, wherein each device has an associated constraint on the amount of tasks that it can perform per unit of time (**Corne:** p9, L16-21; p12, L26 to p15, L19; p24, L12 to P25, L11; Figs. 3 and 4), the method including execution of a computer program to automatically perform a series of machine operations comprising: (a) generating a plurality of trial solution allocations of tasks to devices to form an initial population of allocations (**Corne:** p8, L26-33; p15, L12 to p16, 4; p27, L3-14; p27, L3-10; p29, L16-19; Fig. 3); (b) calculating for each trial solution a fitness vector comprising a plurality of elements each which is indicative of whether the associated constraint of a corresponding respective one of the plurality of devices has been satisfied by the trial solution (**Corne:** p2, L4-6; p3, L30 to p4, L13; p8, L26-32; p9, L23-30; p14, L20-27; p16, L5-23; p28, L14-19; EN: paragraph 12 applies. Groups not further defined in the claim. The objectives are considered groups); (c) selecting a plurality of allocations of tasks to devices for inclusion in the next generation of allocations in dependence upon their respective fitness vectors (**Corne:** p3, L30 to p4, L13; p16, L5-23; p27, L3-24; Figs. 3-5); (d) creating a next generation of allocations of tasks to devices by including the allocations selected in step

Art Unit: 2129

(c) together with new allocations, each of which is formed from a combination of two or more of the allocations selected in step (c) (**Corne**: P16, L1-26; p28, L21-22; Figs. 3-5); (e) repeating steps (b) to (d) until the population stabilizes (**Corne**: p16, L1-32; p27, L3-25; Figs. 3-5); and (f) outputting an allocation of the tasks among the devices according to one of the allocations included in the stabilized population (**Corne**: p27, L26).

Claim 15

Corne anticipates the devices are processors within a multi-processor computer system (**Corne**: p24, L12 to p25, L30; EN: paragraph 12 applies. The method could be parallelized (multiprocessors). Moreover, the clients and servers contain processors (a multiprocessor computer system).

Claim 16

Corne anticipates the devices are computers within a computer network (**Corne**: p24, L12 to p25, L3; EN: the clients and the servers in the network).

Claim 17

Corne anticipates the devices are routers and the tasks are estimated volumes of traffic to be routed through the routers within a data network, and wherein the allocations are used to form a routing strategy (**Corne**: p16-21; p27, L31 to p28, L2).

Claim 18

Corne anticipates step (c) comprises selecting non-dominated allocations using the criteria of Pareto optimality of the associated fitness vectors (**Corne**: p3, L29 to p4, L15; p14, L20-27; p18, L29-33).

Claim 19

Corne anticipates new allocations are formed in step (d) by performing crossover operations in respect of groups of two or more of the allocations selected in step (c) (**Corne**: p22, L21-30; p29, L5-7).

Claim 20

Corne anticipates mutation operations are applied to one or more of the new allocations formed in step (d) according to a predetermined probability of each new allocation being mutated (**Corne**: p17, L9-24; p22, L21-30; p25, L10-14; p29, L5-7).

Claim 24

Corne anticipates a method of operating a multi-processor computer system to execute a computer program including a set of multiple separate tasks which must all be completed in order for the program execution to be complete (**Corne**: p2, L4-6; p25, L16-21), said method comprising: distributing multiple of said set of program tasks between multiple computer program processor devices to efficiently accomplish all such distributed tasks wherein each computer program processor device has an associated constraint on the amount of tasks that it can perform per unit of time (**Corne**: p24, L25 to p25, L30; EN: it is inherent that every computer or processor can only perform a certain amount of operations at a time), said distribution of tasks to said processor devices being accomplished by: (a) receiving digital data signals representing a set of plural tasks for assignment to available processor devices and, based thereon, defining an initial population of trial solutions assigning specific tasks to specific processor devices (**Corne**: p8, L26-33; p15, L12 to p16, 4; p27, L3-14; p27, L3-10; p29, L16-19;

Art Unit: 2129

Fig. 3); (b) calculating for each trial solution a fitness vector comprising a plurality of elements each of which is indicative of whether the constraint of a corresponding respective one of the multiple computer program processor devices has been satisfied by the trial solution (**Corne**: p2, L4-6; p3, L30 to p4, L13; p8, L26-32; p9, L23-30; p14, L20-27; p16, L5-23; p28, L14-19; EN: paragraph 12 applies. Groups not further defined in the claim. The objectives are considered groups); (c) selecting a plurality of trial solutions for a next generation in dependence upon their respective fitness vectors (**Corne**: p3, L30 to p4, L13; p16, L5-23; p27, L3-24; Figs. 3-5); (d) creating a new population of trial solutions including the selected earlier trial solutions (**Corne**: P16, L1-26; p28, L21-22; Figs. 3-5); (e) repeating steps (b) to (d) until the population of trial solutions stabilizes, the individual trial solutions of the stable population representing multiple optional ways of dividing the input set of tasks (**Corne**: p16, L1-32; p27, L3-25; Figs. 3-5); and (f) outputting task assignments to said processor devices in conformance with at least one of said stabilized population as an optimized allocation of tasks to resources (**Corne**: p27, L26).

Claim 25

Corne anticipates a multi-processor computer system for executing a computer program including a set of multiple separate tasks which must all be completed in order for the program execution to be complete (**Corne**: p2, L4-6; p25, L16-21), said system comprising: a plurality of computer program processors (**Corne**: p24, L25 to p25, L30; EN: paragraph 12 applies. The method can be parallelized (multiple processors). Moreover, a client/server system and a network will have multiple processors working

Art Unit: 2129

together); and means networked with said multiple computer program processors for distributing multiple of said set of program tasks between said multiple computer program processor devices to efficiently accomplish all such distributed tasks wherein each computer program processor device has an associated constraint on the amount of tasks that it can perform per unit time (**Corne**: p24, L25 to p25, L30; paragraph 12 applies. The communication channels used by the system. It is inherent that computers and processors can only perform a number of functions in a period of time), said distribution of tasks to said processor devices being accomplished by:

(a) receiving digital data signals representing a set of plural tasks for assignment to available processors and, based thereon, defining an initial population trial solutions assigning specific tasks to specific processors (**Corne**: p8, L26-33; p15, L12 to p16, 4; p27, L3-14; p27, L3-10; p29, L16-19; Fig. 3); (b) calculating for each trial solution a fitness vector comprising a plurality of elements each of which is indicative of whether the constraint of a corresponding respective one of the multiple computer program processor devices has been satisfied by the trial solution (**Corne**: p2, L4-6; p3, L30 to p4, L13; p8, L26-32; p9, L23-30; p14, L20-27; p16, L5-23; p28, L14-19; EN: paragraph 12 applies. Groups not further defined in the claim. The objectives are considered groups); (c) selecting a plurality of trial solutions for the next generation in dependence upon their respective fitness vectors (**Corne**: p3, L30 to p4, L13; p16, L5-23; p27, L3-24; Figs. 3-5); (d) creating a new population of trial solutions including the selected earlier trial solutions (**Corne**: P16, L1-26; p28, L21-22; Figs. 3-5); (e) repeating steps (b) to (d) until the population of trial solutions stabilizes, the individual trial solutions of the

Art Unit: 2129

stable population representing multiple optional ways of dividing the input set of tasks (**Corne**: p16, L1-32; p27, L3-25; Figs. 3-5), and (f) outputting task assignments to said processors in conformance with at least one of said stabilized population as an optimized allocation of tasks to resources (**Corne**: p27, L26).

Response to Applicant's arguments

9. The Applicant's arguments in the Appeal Brief filed regarding the rejection under 35 USC 102 have been fully considered but are not persuasive.

In reference to Applicant's arguments on pages 16-17:

The Applicant generally argues the claim term "grouping". In the argument, the Applicant states that the claim "makes it clear that there are to be as many groups as there are resources. However, as discussed in the Advisory Action of May 21, 2008 and in the rejection under 35 USC 112 of the instant Office Action, the claim language does not suggest that there are as many groups as there are resources. First, as claimed, note that the parameters W , n , and m are different in lines 2 and 4 of claim 1 since in line 4 these parameters are in italic mode. If these terms are supposed to have the same value, then they should be written in the same format. It is common practice in mathematics and in computer programming that if a value is defined in a particular manner, then each time that value is referenced it must be referenced using the definition given to that term.

Art Unit: 2129

Applicant must understand that claims are not just words listing out invention elements...they are limitations that define the fundamental claim scope. Although an essential purpose of the examination process is to determine whether or not the claims define an invention that is both novel and nonobvious over the prior art, another essential purpose of patent examination is to determine whether or not the claims are precise, clear, correct, and unambiguous. The uncertainties of claim scope should be removed, as much as possible, during the examination process.

In reference to Applicant's arguments on page 13:

The above arguments have been specifically addressed to independent claims 1 and 21 which expressly recite the claim term "groups." However, the same arguments are applicable to independent claims 14 and 23-25 which require "... elements each of which is indicative of whether the associated constraint of a corresponding respective one of the [plurality of devices or multiple computer processor devices] has been satisfied by the trial solution." This requires that there are (at least) as many elements as there are "resources" where the "resource" in question depends upon the particular claim (e.g., in claims 14 and 23 its "devices" in claims 24 and 25 its "processor devices"). Again, in Corne there are only three objectives and each fitness vector correspondingly has only 3 elements and so Corne does not have "elements each of which is indicative of whether the constraint of a corresponding one of the multiple devices/processor devices..." rather each element in Corne is indicative of the global extent to which a particular global objective function has been met. Thus the same arguments apply for independent claims 14 and 23-25 as for independent claims 1 and 21.

Examiner's response:

The claims and only the claims form the metes and bounds of the invention. The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Claim 14, step (b) reads: "calculating for each trial solution a fitness vector comprising a plurality of elements each of which is indicative of whether the associated constraint of a corresponding respective one of the plurality of devices has been satisfied by the trial

Art Unit: 2129

solution". The language used in the claim does not require that there be as many elements in the fitness vector as there are resources. In the broadest reasonable sense, this fitness vector could have any number of elements that provides an indication of satisfaction of the constraints corresponding to the devices since the claim does not makes it explicit that there is one element in the fitness vector for each resource and that a particular element describes the satisfaction of the constraint associated to a particular resource.

Again, Applicant must understand that claims are not just words listing out invention elements...they are limitations that define the fundamental claim scope. Although an essential purpose of the examination process is to determine whether or not the claims define an invention that is both novel and nonobvious over the prior art, another essential purpose of patent examination is to determine whether or not the claims are precise, clear, correct, and unambiguous. The uncertainties of claim scope should be removed, as much as possible, during the examination process.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corne as set forth above in view of Buckzak et al (US Patent #6,957,200, referred to as **Buczak**).

Art Unit: 2129

Claim 7

Corne does not teach a non-reserved proportion of the new population is generated using a Roulette wheel selection method.

Buczak teaches a non-reserved proportion of the new population is generated using a Roulette wheel selection method (**Buczak**: C6, L33-41; C8, L56 to C9, L7; C18, claim 12).

It would have been obvious to one of ordinary skill in the arts at the time of the applicant's invention to modify the teachings of Corne by incorporating generating a non-reserved proportion of the new population using the roulette wheel method as taught by Buczak for the purpose of having a process that selects individuals from the population for mating based on the fitness of the genes in the population.

Examination Considerations

11. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 105455, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the

Art Unit: 2129

art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

12. Examiner's Notes are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

13. Unless otherwise annotated, Examiner's statements are to be interpreted in reference to that of one of ordinary skill in the art. Statements made in reference to the condition of the disclosure constitute, on the face of it, the basis and such would be obvious to one of ordinary skill in the art, establishing thereby an inherent prima facie statement.

14. Examiner's Opinion: paragraphs 11-13 apply. The claims and only the claims form the metes and bounds of the invention. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turner et al. US Patent #6,215,771

Art Unit: 2129

Cherneff et al. US Patent #6,233,493

Kropaczek et al. US PGPUB #2004/0059696

16. Claims 1, 3-21 and 23-25 are rejected.

Correspondence Information

17. Any inquires concerning this communication or earlier communications from the examiner should be directed to Omar F. Fernández Rivas, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-2589 or email omar.fernandezrivas@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (571) 273-2589.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, David Vincent, may be reached at (571) 272-3080.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

Omar F. Fernández Rivas
Patent Examiner
Artificial Intelligence Art Unit 2129
United States Department of Commerce
Patent & Trademark Office

/Omar F. Fernández Rivas/
Examiner, Art Unit 2129
Friday, October 17, 2008.
/David R Vincent/
Supervisory Patent Examiner, Art Unit 2129